

CLAIMS

What I claim is:

1. A gravure ink solution comprising at least one polymeric colorant toner component exhibiting a λ_{\max} absorption measurement between about 550 and 610 nm and comprising a nonionic chromophore component, at least one coloring component selected from the group consisting of at least one pigment, at least one dyestuff, and a mixture of both, at least one solvent, and at least one resin component.
2. The gravure ink solution of claim 1 wherein said solvent is toluene and said polymeric colorant toner component exhibits a λ_{\max} absorption measurement between about 560 and 580 nm.
3. The gravure ink solution of Claim 1 wherein said polymeric colorant toner component comprises polyoxyalkylene chains thereon.
4. The gravure ink solution of Claim 3 wherein said polyoxyalkylene chains comprise at least a majority of C₃ or higher alkylene oxide monomers.
5. The gravure ink solution of Claim 4 wherein said polyoxyalkylene chains comprise a combination of ethylene oxide monomers and C₃ or higher alkylene oxide monomers in a ratio of from about 1:1.4 to about 1:4.

6. The gravure ink solution of Claim 5 wherein said C₃ or higher alkylene oxide monomer is propylene oxide.

7. The gravure ink solution of Claim 2 wherein said polymeric colorant toner component comprises polyoxyalkylene chains thereon.

8. The gravure ink solution of Claim 7 wherein said polyoxyalkylene chains comprise at least a majority of C₃ or higher alkylene oxide monomers.

9. The gravure ink solution of Claim 8 wherein said polyoxyalkylene chains comprise a combination of ethylene oxide monomers and C₃ or higher alkylene oxide monomers in a ratio of from about 1:1.4 to about 1:4.

10. The gravure ink solution of Claim 9 wherein said C₃ or higher alkylene oxide monomer is propylene oxide.

11. A printed substrate selected from the group consisting of a textile, a polymeric film, and a paper, a portion of which is contacted with the ink solution of claim 1.

12. A printed substrate selected from the group consisting of a textile, a polymeric film, and a paper, a portion of which is contacted with the ink solution of claim 2.

13. A printed substrate selected from the group consisting of a textile, a polymeric film, and a paper, a portion of which is contacted with the ink solution of claim 5.

14. A printed substrate selected from the group consisting of a textile, a polymeric film, and a paper, a portion of which is contacted with the ink solution of claim 6.
15. A printed substrate selected from the group consisting of a textile, a polymeric film, and a paper, a portion of which is contacted with the ink solution of claim 9.
16. A printed substrate selected from the group consisting of a textile, a polymeric film, and a paper, a portion of which is contacted with the ink solution of claim 10.
17. A method of coloring a paper, polymeric film, or textile substrate comprising the steps of
- (a) providing a substrate selected from the group consisting of paper article, polymeric film, and a textile article;
 - (b) contacting at least a portion of said substrate with the ink solution of Claim 1;
- and
- (c) heating said contacted substrate to a temperature and for a period of time sufficient to effectively fix said compound to the surface of said substrate.
18. A method of coloring a paper, polymeric film, or textile substrate comprising the steps of
- (a) providing a substrate selected from the group consisting of paper article, polymeric film, and a textile article;
 - (b) contacting at least a portion of said substrate with the ink solution of Claim 2;
- and

(c) heating said contacted substrate to a temperature and for a period of time

sufficient to effectively fix said compound to the surface of said substrate.

19. A method of coloring a paper, polymeric film, or textile substrate comprising the steps of

(a) providing a substrate selected from the group consisting of paper article, polymeric film, and a textile article;

(b) contacting at least a portion of said substrate with the ink solution of Claim 5; and

(c) heating said contacted substrate to a temperature and for a period of time sufficient to effectively fix said compound to the surface of said substrate.

20. A method of coloring a paper, polymeric film, or textile substrate comprising the steps of

(a) providing a substrate selected from the group consisting of paper article, polymeric film, and a textile article;

(b) contacting at least a portion of said substrate with the ink solution of Claim 6; and

(c) heating said contacted substrate to a temperature and for a period of time sufficient to effectively fix said compound to the surface of said substrate.

21. A method of coloring a paper, polymeric film, or textile substrate comprising the steps of

(a) providing a substrate selected from the group consisting of paper article, polymeric film, and a textile article;

(b) contacting at least a portion of said substrate with the ink solution of Claim 9;

and

(c) heating said contacted substrate to a temperature and for a period of time sufficient to effectively fix said compound to the surface of said substrate.

22. A method of coloring a paper, polymeric film, or textile substrate comprising the steps of

(a) providing a substrate selected from the group consisting of paper article, polymeric film, and a textile article;

(b) contacting at least a portion of said substrate with the ink solution of Claim 10; and

(c) heating said contacted substrate to a temperature and for a period of time sufficient to effectively fix said compound to the surface of said substrate.

23. A black gravure ink composition comprising at least one coloring agent selected from the group consisting of at least one black pigment, at least one black dyestuff, and a mixture of both, at least one solvent, at least one resin, and at least one toner component, wherein, when measured under CIELAB standards, and at a brightness level (L^*) of at least 26, said ink exhibits a hue angle (h) of at most 42.

24. The ink composition of Claim 23 wherein said ink exhibits a hue angle of at most 40.

25. The ink composition of Claim 24 wherein said ink exhibits a hue angle of at most 36.

26. The ink composition of Claim 25 wherein said ink exhibits a hue angle of at most 32.

27. A black gravure ink composition comprising at least one coloring agent selected from the group consisting of at least one black pigment, at least one black dyestuff, and a mixture of both, at least one solvent, at least one resin, and at least one toner component, wherein when measured under CIELAB standards, and at a brightness level (L^*) of at least 26, said ink exhibits an a^* level of at most 1.4, a b^* level of at most 0.7, and a hue angle (h) of at most 50.

28. The ink composition of Claim 27 wherein said ink exhibits a hue angle (h) of at most 42.

29. The ink composition of Claim 28 wherein said ink exhibits a hue angle (h) of at most 40.

30. The ink composition of Claim 29 wherein said ink exhibits a hue angle of at most 36.

31. A printed substrate selected from the group consisting of a textile, a polymeric film, and a paper, a portion of which is contacted with the ink solution of claim 23.

32. A printed substrate selected from the group consisting of a textile, a polymeric film, and a paper, a portion of which is contacted with the ink solution of claim 24.

33. A printed substrate selected from the group consisting of a textile, a polymeric film, and a paper, a portion of which is contacted with the ink solution of claim 25.
34. A printed substrate selected from the group consisting of a textile, a polymeric film, and a paper, a portion of which is contacted with the ink solution of claim 26.
35. A printed substrate selected from the group consisting of a textile, a polymeric film, and a paper, a portion of which is contacted with the ink solution of claim 27.
36. A printed substrate selected from the group consisting of a textile, a polymeric film, and a paper, a portion of which is contacted with the ink solution of claim 28.
37. A printed substrate selected from the group consisting of a textile, a polymeric film, and a paper, a portion of which is contacted with the ink solution of claim 29.
38. A printed substrate selected from the group consisting of a textile, a polymeric film, and a paper, a portion of which is contacted with the ink solution of claim 30.
39. A method of coloring a paper, polymeric film, or textile substrate comprising the steps of
- (a) providing a substrate selected from the group consisting of paper article, polymeric film, and a textile article;
 - (b) contacting at least a portion of said substrate with the ink solution of Claim 23; and

(c) heating said contacted substrate to a temperature and for a period of time

sufficient to effectively fix said compound to the surface of said substrate.

40. A method of coloring a paper, polymeric film, or textile substrate comprising the steps of

(a) providing a substrate selected from the group consisting of paper article, polymeric film, and a textile article;

(b) contacting at least a portion of said substrate with the ink solution of Claim 27; and

(c) heating said contacted substrate to a temperature and for a period of time sufficient to effectively fix said compound to the surface of said substrate.